Rising to the Innovation Challenge

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The challenge

"The U.S. is not graduating the volume of scientists and engineers, we do not have a lock on the infrastructure, we do not have a lock on the new ideas, and we are either flat-lining, or in real dollars cutting back, our investments in physical science and engineering. The only crisis the U.S. thinks it has today is the war on terrorism. It's not."

Craig Barrett
CEO, Intel

The opportunity

"Science, technology, and knowledge-driven innovation are critical to job and wealth creation in these new dimensions of economic reality. The degree to which a state's knowledge assets are harnessed and converted into successful innovations, products and services determines its economic future."

Milken Institute's 2004 State Technology and Science Index

Components of tech transfer

- ⇨ Federal Investment
- ⇨ Research & Development
- ⇨ Intellectual Property
- ⇨ Licensing to industry

Addressed by federal legislation

- ⇨ Prototype
- ⇨ Marketable product
- ⇨ Commercialization
- ⇨ Economic Development

Involve many factors beyond the quality of the intellectual property: effective management, venture capital, marketing strategy

Role of universities in economic development

- ⇨Basic research: over 70% of industry patents cite federally funded research conducted largely at universities
- ⇨Educating the workforce
- ⇨Technology transfer (Bayh-Dole Act)
- ⇨Ongoing professional education

Challenges to fulfilling that role

- ⇨State funds to public universities cut.
- ⇨Unbalanced federal research portfolio neglects physical sciences, engineering.
- ⇨Graduate fellowships in science and technology fields are dwindling.
- ⇨Visa restrictions make attracting international talent difficult.
- ⇨Europe and Asia are making large investments in higher education and in research and development.

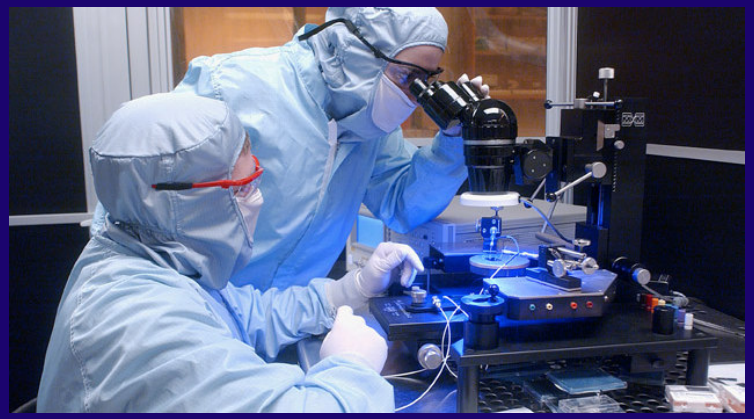
Taking it to the next level

- ⇨ Advanced Technology Development Center (Technology-led Excellence in Economic Development Award winner)
- ⇨ Economic Development Institute
- ⇨ VentureLab
- ⇨ Institute for Enterprise Transformation
- ⇨ Aligning university strengths, resources and objectives with state and community efforts

A model of state-level collaboration

- Partners:
  - → 6 Georgia research universities
  - → Private industry
  - → State government
- Focus on:
  - → Biotechnology
  - → Environmental science and technology
  - → Telecommunications
- Funds:
  - → Endowed chairs
  - → Lab facilities/equipment
  - → Research projects
  - → Industry studies

National LambdaRail infrastructure



National nanotech network

- 13 universities formed the National Nanotechnology Infrastructure Network, sponsored by NSF
- Provides access for scientists from universities, corporations, and government labs to specialized university resources for studying atomic and molecular-scale materials and processes

Council on Competitiveness

National Innovation Initiative

- ⇨Brings together America's top minds in seven working groups now underway
- ⇨Groups will define the factors and conditions that create a fertile environment for innovation
- ⇨Develop an agenda for national action to create that environment
- ⇨National innovation summit in Dec '04